

hand hygiene

Fearing My Unpleasant High-Pitched Whine

BY HEATHER (SAUNDERS) STOLTZFUS, MPH, RN, CIC



To discover who I am, visit [InfectionControlToday.com/view/Sept-2024-bug-month](https://www.infectioncontroltoday.com/view/Sept-2024-bug-month)

Buzz buzz. Buzz buzz. You can hear the familiar, high-pitched whine generated by their wings. They're carrying me, far and wide, looking for another human to infect with my virus. I'm an RNA virus of the family Flaviviridae. I have 4 serotypes that can infect humans, and unlike some viruses, infection with one does not guarantee immunity to others. Subsequent infections with other serotypes may be more severe than initial infections. For this reason, humans must keep a close eye on me, controlling the populations of that pesky insect that transmits me.

The incidence of my virus has grown in the past 2 decades, thanks partly to climate change and continued globalization. These changes have influenced my vector's ability to adapt to the growing urbanization in your human population. In 2000, the world saw 505,430 infections. In 2023, I caused a record-breaking 6.5 million cases with more than 7300 deaths. More than 4.5 million people have already been infected in 2024. Increases in recent years have also been attributed to the COVID-19 pandemic, which weakened health care infrastructures, and the humanitarian crises in multiple countries, contributing to more population migration.

Approximately 40% to 50% of the human population in more than 100 countries is at risk of infection from my virus. I'm endemic to areas where the insect that carries me commonly resides, such as tropical and subtropical regions. My insect has many types,

but the kind that transmits me derived its name from the Greek word meaning "unpleasant." Indeed, this insect's itchy bite that transmits my virus is unpleasant.

The disease that my virus causes has been recognized for over 2000 years. Oh, and I share a name with the disease I cause. It is possible that my virus was first described in a Chinese medical encyclopedia (initially published in AD 265-420). The disease was called "water poison" and was thought to be carried by flying insects. Outbreaks over the centuries were also speculated to have been inflicted by me, such as those in the French West Indies and Panama in 1635 and 1699.

Signs and symptoms of my infection vary from no symptoms at all to hemorrhagic fever and hypovolemic shock. Symptom onset is generally 4 to 10 days after infection but can take 2 weeks. Symptoms include high fever, severe headache, pain behind the eyes, muscle and joint pain, nausea, vomiting, swollen glands, and rash. Approximately 5% of cases will be severe, requiring hospitalization.

Severe symptoms usually appear after the fever subsides, with the patient even beginning to feel recovered. Symptoms such as bleeding in vomit, gums, nose, or stool can suddenly appear, giving way to increased fatigue, weakness, thirst, pale skin, and rapid breathing. Hypovolemic shock can develop secondary to the hemorrhagic state common to those experiencing severe symptoms of the disease. Vomiting

and abdominal pain can also become severe and debilitating. Rarely does my virus cause death, but without proper care of patients experiencing these severe symptoms, the shock syndrome and the hemorrhagic state caused by the virus can be fatal. Individuals who have been infected with my virus are at greater risk of severe symptoms with subsequent infections.

Curative treatment does not exist; therefore, the focus is on alleviating symptoms, such as acetaminophen to control pain, and supportive therapies, including fluids and rest. Ibuprofen is not recommended due to my virus' risk of causing internal bleeding.

My disease is spread through the bite of my type of mosquito, a daytime-biter preferring the hours of dusk to dawn. Anyone in endemic regions should be conscientious about avoiding mosquito bites at that time. However, although rare, disease transmission has been documented through other routes, including maternal-to-fetal transmission, blood transfusions, and needlestick injuries, and primarily has been reported in endemic regions.

Vector control is crucial to prevent infection with my virus. To reduce mosquito breeding, remove standing water, dispose of waste properly, cover water containers, and use appropriate insecticides as needed. In endemic regions, it is important to use insect repellent, coils, vaporizers, netting, window screens, and proper clothing to prevent mosquito bites.

I am dengue! □